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EXAMINER	
LU, FRANK WEI MIN	
ART UNIT	**PAPER NUMBER**
1634	

DATE MAILED: 01/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/051,452	ZON ET AL.	
	Examiner	Art Unit	
	Frank W Lu	1634	

-- The MAILING DATE of this communication appears on the cover sh et with th correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 October 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) *10 and 11* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *8/2002* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I, claims 1-9 and 12 filed on October 24, 2003 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Specification

2. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code (see page 14, line 10). Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

3. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

Claim Objections

4. Claim 3 is objected to because of the following informality: "GST-, MYC-, HA-, FLAG- and His-"are abbreviations. They can only be used after each phrase appears once.

5. Claim 8 is objected to because of the following informality: "a specific stimuli" should be "a specific stimulus" since the word "stimuli" is a plural term.

6. Claim 8 is objected to because of the following informality: "more than one expression library is" should be "more than one expression library are".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. Claims 1-9 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 1 recites the limitation "the pooled plasmid clones" in the claim. There is insufficient antecedent basis for this limitation in the claim since there is no pooled plasmid clones in step d). The pooled arrayed clones recited in step d) and pooled plasmid clones in step e) appear to be different. Please clarify.

9. Claim 2 recites the limitation "the tag" in the claim. There is insufficient antecedent basis for this limitation in the claim because there is no tag in claim 1. The word "tagged" is not equal to "tag". Please clarify.

10. Claim 5 recites the limitation "cDNA constructs having specific protein motifs that have been selected by polymerase chain reaction" in the claim. There is insufficient antecedent basis for this limitation in the claim because there is no polymerase chain reaction in claims 1 and 4. Please clarify.

11. Claim 6 is rejected as vague and indefinite because, from the language, it is unclear that "EF-1α" represents a genomic DNA or cDNA of EF-1α since it is known that a cDNA does not have a promoter. Please clarify.

12. Regarding claim 8, the phrase "such as" in g) of the claim renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

13. Claim 8 is rejected as vague and indefinite in view of step h) of the claim because it is unclear whether the phrases in parentheses further limit "post-translational modifications" or not. Please clarify.

14. Claim 9 recites the limitation "each pool of clones" in the claim. There is insufficient antecedent basis for this limitation in the claim because there is no phrase "pools of clones" in step d) of claim 1. Please clarify.

15. Claim 12 is rejected as vague and indefinite because it is unclear that "the cells" mean cells from a cell type or cells from two or more different cell types. Please clarify.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

17. Claims 1-4, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brent *et al.,* (US Patent No. 5,780,262, filed on June 1995) in view of Adamou *et al.,* (US Patent No. 5,811,535, filed on August 1996).

Brent *et al.,* teach max-interacting proteins and related molecules and methods.

Regarding claim 1, since Brent *et al.,* teach to make an activation-tagged cDNA expression library from RNA isolated from serum grown, proliferating HeLa cells comprising: (1) synthesizing a double stranded cDNA; (2) ligating the cDNA into pJG4-5 expression vector that is designed to possess the following features: a galactose-inducible promoter to allow conditional expression of the library proteins, an epitope tag to facilitate their detection, a nuclear localization signal to maximize their intranuclear concentration in order to increase the sensitivity of the selection, and a weak acid blob activation domain; and (3) introducing the ligation mixture into *E. coli* SURE cells by electrophoration (Gene-Pulser, Bio-Rad, Hercules, Calif.) according to the manufacturer's instructions (see column 12, line 30 bridging to column 13, line 40), Brent *et al.,* disclose preparing a tagged cDNA expression library comprising bacterial cells comprising tagged cDNA plasmid constructs by i) obtaining double-stranded cDNA from cells expressing a polypeptide with the biochemical activity of interest; ii) ligating the cDNA into an expression vector wherein the expression vector comprises a coding region for a tag (ie., HA1 epitope tag) operably linked to a promoter (ie., a galactose-inducible promoter) to produce a tagged CDNA construct; and iii) transforming competent bacterial cells with the tagged cDNA construct of step ii) as recited in a) of claim 1 and claims 3 and 4. Since Brent *et al.,* teach to culture bacteria containing the double stranded cDNA in leu^- plate and plasmids from colonies that turn blue on X-gal medium are isolated (see column 13, lines 41-67) and it is

known that a single recombinant bacterial colony contains a single plasmid, Brent *et al.*, disclose culturing the bacterial cells of step a) to produce clones wherein each clone corresponds to a single tagged cDNA construct, arraying the individual bacterial clones, pooling a predetermined number of arrayed clones (ie., blue colonies on the plate) and isolating plasmid DNA from them as recited in steps c) to e) of claim 1. Since Brent *et al.*, teach that the isolated plasmid DNA with all or part of a Mxi encoding cDNA fragment in a suitable vector is transfected into a mammalian cell lines and expressed as a fusion protein (see columns 15 and 16), Brent *et al.*, disclose transfecting suitable mammalian host cells with a pooled plasmid clone and maintaining the transfected cells under conditions suitable for the expression of the tagged cDNA construct, thereby producing tagged polypeptides (ie., a fusion protein) as recited in step e) of claim 1. Since Brent *et al.*, teach that expressed Mxi is used for immunoassays (see column 17, last paragraph and column 18, first paragraph), Brent *et al.*, disclose assaying the expressed tagged polypeptides for a biochemical activity of interest as recited in step f) of claim 1 by interacting specifically with any biological element or compound as recited in f) of claim 8.

Brent *et al.*, do not disclose to repeat steps d) through f) one or more times as recited in step g) of claim 1 and claim 2.

Adamou *et al.*, teach that the cDNA of interest is isolated by transfecting the entire cDNA library into mammalian cells and panning the cells on a dish containing HC gp39-L bound to the plate. Cells which attach after washing are lysed and the plasmid DNA is isolated, amplified in bacteria, and the cycle of transfection and panning is repeated until a single cDNA clone is obtained as recited in recited in step g) of claim 1 and claim 2 (see column 28, lines 39-65).

Therefore, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to have repeated steps d) through f) of claim 1 one or more times until single cDNA construct expressing a tagged polypeptide having the biochemical activity of interest is identified in view of patents of Brant *et al.*, and Adamou *et al.*. One having ordinary skill in the art would have been motivated to do so because Adamou *et al.*, show that, during a process of isolating a cDNA of interest, the cycle of transfection and panning is repeated until a single cDNA clone is obtained (see column 28, lines 39-65). One having ordinary skill in the art at the time the invention was made would have been a reasonable expectation of success to repeat steps d) through f) of claim 1 one or more times until single cDNA construct expressing a tagged polypeptide having the biochemical activity of interest is identified.

18. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brent *et al.*, (June 1995) in view of Adamou *et al.*, (August 1996) as applied to claims 1-4 and 8 above, further in view of Wilson *et al.*, (US Patent No. 5,932,211, filed on November 28, 1994).

The teachings of Brent *et al.*, and Adamou *et al.*, have been summarized previously, *supra.* Brent *et al.*, teach an expression vector pJG4-5 comprising a galactose promoter (see column 12, lines 30-64).

Brent *et al.*, and Adamou *et al.*, do not disclose to use an EF-1α promoter in the expression vector recited in claim 6.

Wilson *et al.*, teach that chimeric rIDS cDNA is operably linked to human EF-1 promoter (see column 18, first paragraph).

Therefore, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to have used human EF-1 promoter as a promoter in the expression vector recited in claim 4 in view of patents of Brent *et al.*, Adamou *et al.*, and Wilson *et al.*. One having ordinary skill in the art would have been motivated to do so because the simple replacement of one kind of promoter with known properties (i.e., a galactose promoter taught by Brent *et al.*,) from another kind of promoter with known properties (i.e., EF-1 promoter taught by Wilson *et al.*,) during the process of constructing an expression vector recited in claim 4 would have been, in the absence of convincing evidence to the contrary, *prima facie* obvious to one having ordinary skill in the art at the time the invention was made.

Furthermore, the motivation to make the substitution cited above arises from the expectation that the prior art elements will perform their expected functions to achieve their expected results when combined for their common known purpose. Support for making the obviousness rejection comes from the M.P.E.P. at 2144.07 and 2144.09.

Also note that there is no invention involved in combining old elements is such a manner that these elements perform in combination the same function as set forth in the prior art without giving unobvious or unexpected results. *In re Rose* 220 F.2d. 459, 105 USPQ 237 (CCPA 1955).

19. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brent *et al.*, (June 1995) in view of Adamou *et al.*, (August 1996) as applied to claims 1-4 and 8 above.

The teachings of Brent *et al.*, and Adamou *et al.*, have been summarized previously, *supra.* Brent *et al.*, teach that mammalian cells used for the transfection are COS 1, NIH3T3 and Hela cells (see column 15, lines 20-35). Adamou *et al.*, teach that a mammalian cell used for the

transfection is COS or 293 cells wherein COS and 293 cells are exchangeable (see column 28, lines 39-65).

Therefore, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to have used 293 T fibroblast cells as recited in claim 7 to perform the method as recited in claim 1 in view of prior art of Brent *et al.*, and Adamou *et al.*. One having ordinary skill in the art would have been motivated to do so because the simple replacement of one cell line with known properties (i.e., COS cells taught by Brent *et al.*,) from another cell line with known properties (i.e., 293 cells taught by Adamou *et al.*,) during the process of performing the method as recited in claim 1 would have been, in the absence of convincing evidence to the contrary, *prima facie* obvious to one having ordinary skill in the art at the time the invention was made because the replacement would not change the method step recited in claim 1.

Furthermore, the motivation to make the substitution cited above arises from the expectation that the prior art elements will perform their expected functions to achieve their expected results when combined for their common known purpose. Support for making the obviousness rejection comes from the M.P.E.P. at 2144.07 and 2144.09.

Also note that there is no invention involved in combining old elements is such a manner that these elements perform in combination the same function as set forth in the prior art without giving unobvious or unexpected results. *In re Rose* 220 F.2d. 459, 105 USPQ 237 (CCPA 1955).

20. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brent *et al.*, (June 5,1995) in view of Adamou *et al.*, (August 1996) as applied to claims 1-4 and 8 above in further in view of Short (US Patent No. 6,057,103, filed on August 26, 1997).

The teachings of Brent *et al.*, and Adamou *et al.*, have been summarized previously, *supra.*

Brent *et al.*, and Adamou *et al.*, do not disclose more than one expression libraries wherein each expression library comprises a different cell type which is stimulated with a specific stimulus as recited in claim 12.

Short teaches gene libraries generated from one or more uncultured microorganisms. This allows one to access untapped resources of biodiversity (see column 5). Since uncultured microorganisms are environmental samples, the environments that the microorganisms are exposed to are considered as specific stimuli as recited in claim 12.

Therefore, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to have made more than one expression libraries wherein each expression library comprises a different cell type which is stimulated with a specific stimulus in view of patents of Brant *et al.*, Adamou *et al.*, and Short. One having ordinary skill in the art would have been motivated to do so because Short suggests that construction of more than one gene libraries would allow one to access untapped resources of biodiversity (see column 5). One having ordinary skill in the art at the time the invention was made would have been a reasonable expectation of success to make more than one expression libraries wherein each expression library comprises a different cell type which is stimulated with a specific stimulus.

Conclusion

21. No claim is allowed.

22. Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993)(See 37 CAR § 1.6(d)). The CM Fax Center number is either (703) 308-4242 or (703)305-3014.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Lu, Ph.D., whose telephone number is 571-272-0746. The examiner can normally be reached on Monday-Friday from 9 A.M. to 5 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion, can be reached on (703) 308-1119.

Any inquiry of a general nature or relating to the status of this application should be directed to the Chemical Matrix receptionist whose telephone number is (703) 308-0196.

Frank Lu
PSA
January 20, 2004